CONDUCTOR HEADS — TYPICAL

FIGURE 1-25

Conductor heads are used to collect water from scuppers or gutters for discharge into downspouts.

Figure 1-25 illustrates some of the many designs used for conductor heads. It is recommended that the depth of its top opening equal ⅔ of its width.

Although all designs shown here use rectangular outlet tubes, these can be varied to conform to the shape of any selected downspout. The outlet tube should have a minimum length of 4 in. (100 mm).

The overflow indicator openings shown in Figures 1-25B and 1-25C are recommended for use in heavy icing areas and for drains that may become plugged by leaves or other debris to indicate that the drainage is obstructed. Overflows may be incorporated in any of the conductor heads shown. If built-in overflow is not used, set the top of the conductor head 1 in. (25 mm) below the scupper to permit overflow. The use of the removable screens with conductor heads is optional.

Conductor heads and downspouts should be fabricated of the same material. The recommended minimum for construction of conductor heads is 24 ga (0.701 mm) galvanized steel; 0.032 in. (0.812 mm) aluminum, 16 oz (0.55 mm) copper, or 26 ga (0.396 mm) stainless steel, or coated metal using the thickness listed for the base metal.

Conductor heads should be installed according to methods outlined in Figures 1-26, 1-27, and 1-28. The typical proportions of conductor heads are:

Face width: 3 to 4 times downspout width

Face depth: 2 times downspout width

Height: 3 to 4 times downspout width

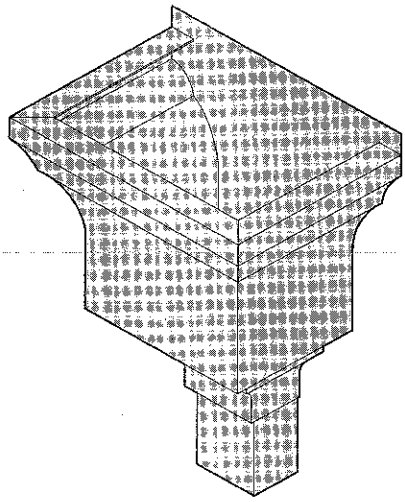


FIG 1-25A

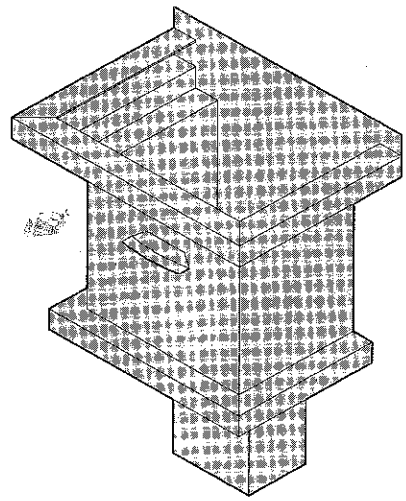


FIG 1-25B

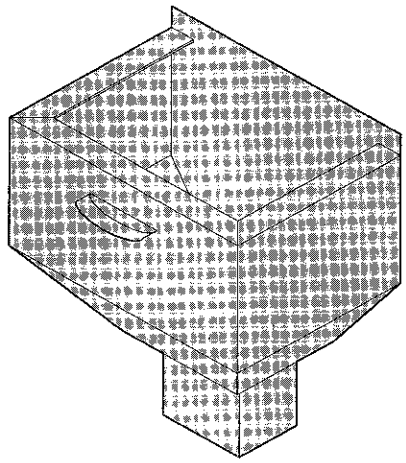


FIG 1-25C

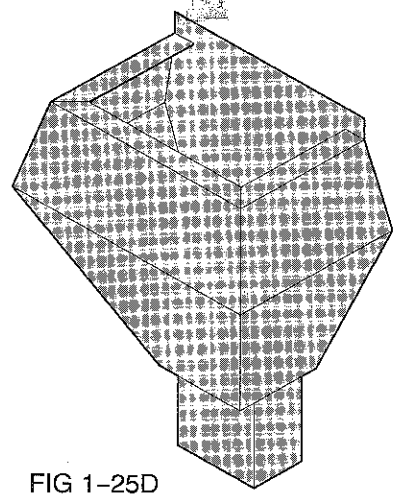


FIG 1-25D

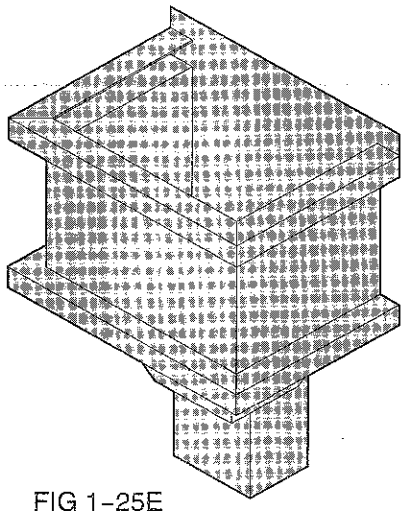


FIG 1-25E

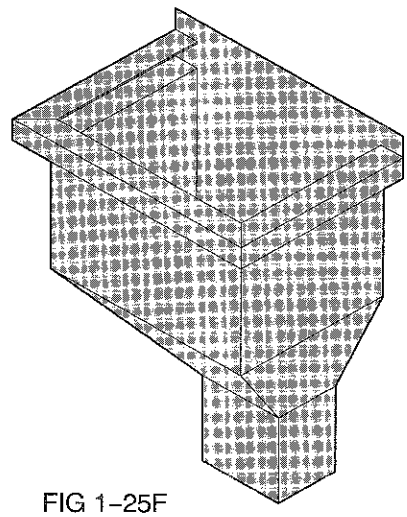


FIG 1-25F

FIGURE 1-25 CONDUCTOR HEADS — TYPICAL

SCUPPER DESIGN AND INSTALLATION

Figure 1-26 illustrates a typical installation of a scupper in a parapet wall discharging into a downspout through a conductor head. The conductor head should be a minimum of 2 in. (50 mm) overall wider than the scupper.

Figure 1-26A shows a section through the parapet wall at the scupper. A conductor head is attached to the wall with masonry fasteners. Overflow openings in conductor heads (Figures 1-25B and 1-25C) are recommended for use in heavy icing areas and for drains that may become plugged by leaves or excessive debris. Where conductor heads without overflow are used, set the rim of the head 1 in. (25 mm) below the scupper.

A closure flange is locked to the scupper and soldered or sealed at the top as shown in Detail 1 and should be at a minimum ½ in. (12 mm) wider than the conductor head on each side. Coated steel or aluminum and PVC bond–coated steel are acceptable materials.

Sealants are acceptable if flashing through the wall is U shaped with no seam at the bottom.

The preferred materials for this application are stainless steel and copper with soldered seams and joints.

If aluminum is used, this joint is sealed rather than soldered.

The junction between the top of the closure flange and the masonry wall is sealed which will require continuous maintenance.

Detail 2 shows an alternate method at the scupper outlet using a loose-lock connection to the conductor head.

FIGURE 1-26

Figure 1-26B shows the scupper from the roof side. A flange is formed and soldered to the scupper prior to its insertion into the wall. If aluminum is used, the flange must be welded, or seamed and sealed. Gravel stop angle is fastened into place in scupper prior to installation. To reduce the water dam effect that gravel stop angles create, they should be notched or perforated. Scupper, downspout, closure flange, and conductor head should be fabricated of the same material.

The recommended minimum for construction of scuppers is 24 ga (0.701 mm) galvanized steel, 0.032 in. (0.812 mm) aluminum, 16 oz (0.55 mm) copper, or 26 ga (0.477 mm) stainless steel.

Not all scuppers require flange trim on the face such as those in precast concrete wall panels. In such walls, 6 × 6 in. (152 × 152 mm), 4 in. (100 mm) diameter and 5 in. (127 mm) diameter sizes are common. All penetrations are sealed.

The size and number of scuppers should be carefully determined to control ponding on roofs. Rectangular shapes convey more water per inch (mm) of water depth on the roof than round shapes. *See* scupper design guidance in Appendix G.

The performance of rectangular shapes probably approximates that of a broad crested weir. Standard equations for channel flow are based on test models larger than typical roof scuppers. While downspout sizes normally are based on draining a given area of a roof, that flow rate may not pass through a scupper sized to have a cross-sectional area equal to the downspout area.

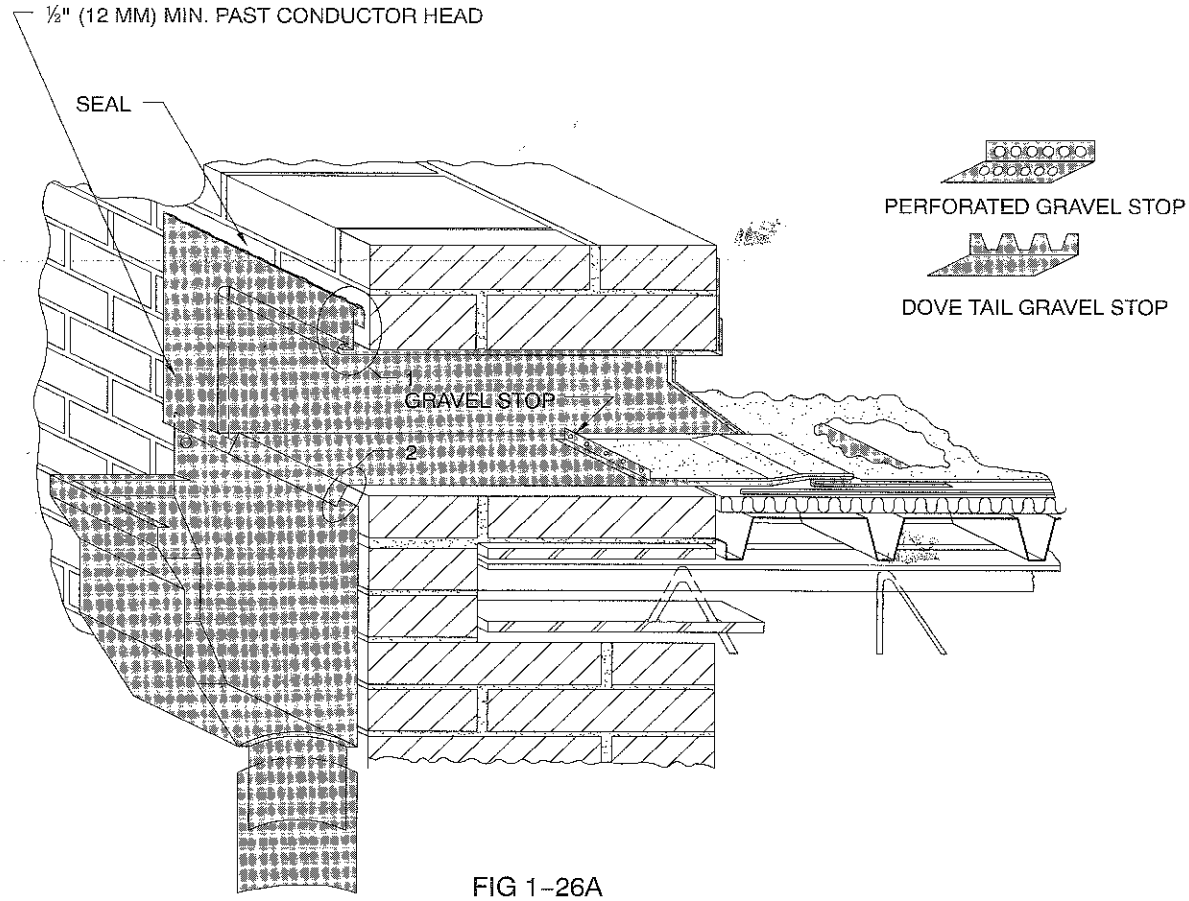
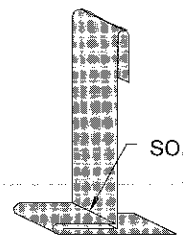
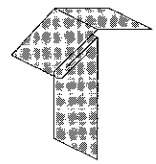


FIG 1-26A



DETAIL 1



DETAIL 2
ALTERNATE

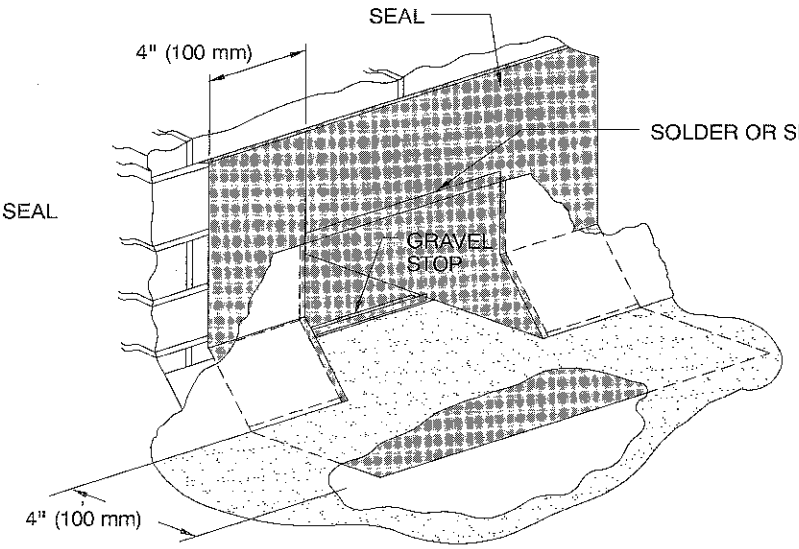


FIG 1-26B

FIGURE 1-26 SCUPPER DESIGN AND INSTALLATION

SCUPPER DESIGN AND INSTALLATION

FIGURE 1-27

Figure 1-27A illustrates a scupper in a parapet wall with the discharge flow directed through the back of a conductor head. An overflow opening is provided in the conductor head face. Its elevation is set to avoid ponding on the roof in case the downspout is plugged. Flashing and sealing of the roof side of the scupper is the same as in Figure 1-26. The conductor head is positioned against and supported from the wall. The termination of the scupper is made watertight at the conductor head. Sealant is applied where the top flange of the conductor head abuts the wall and also is used as necessary to prevent water from entering the wall opening around the scupper.

Figure 1–27B shows an alternate semi-concealed scupper outlet with increased overflow capacity in the conductor head. The edges of the head must be suitably stiff and the bottom may be flat with about 2 in. (50 mm) pan depth, depending on size. The roof side of these scuppers is made as shown in Figure 1-26. Local code may dictate elevation of the conductor head overflow.

See the scupper design guidance in Appendix G.

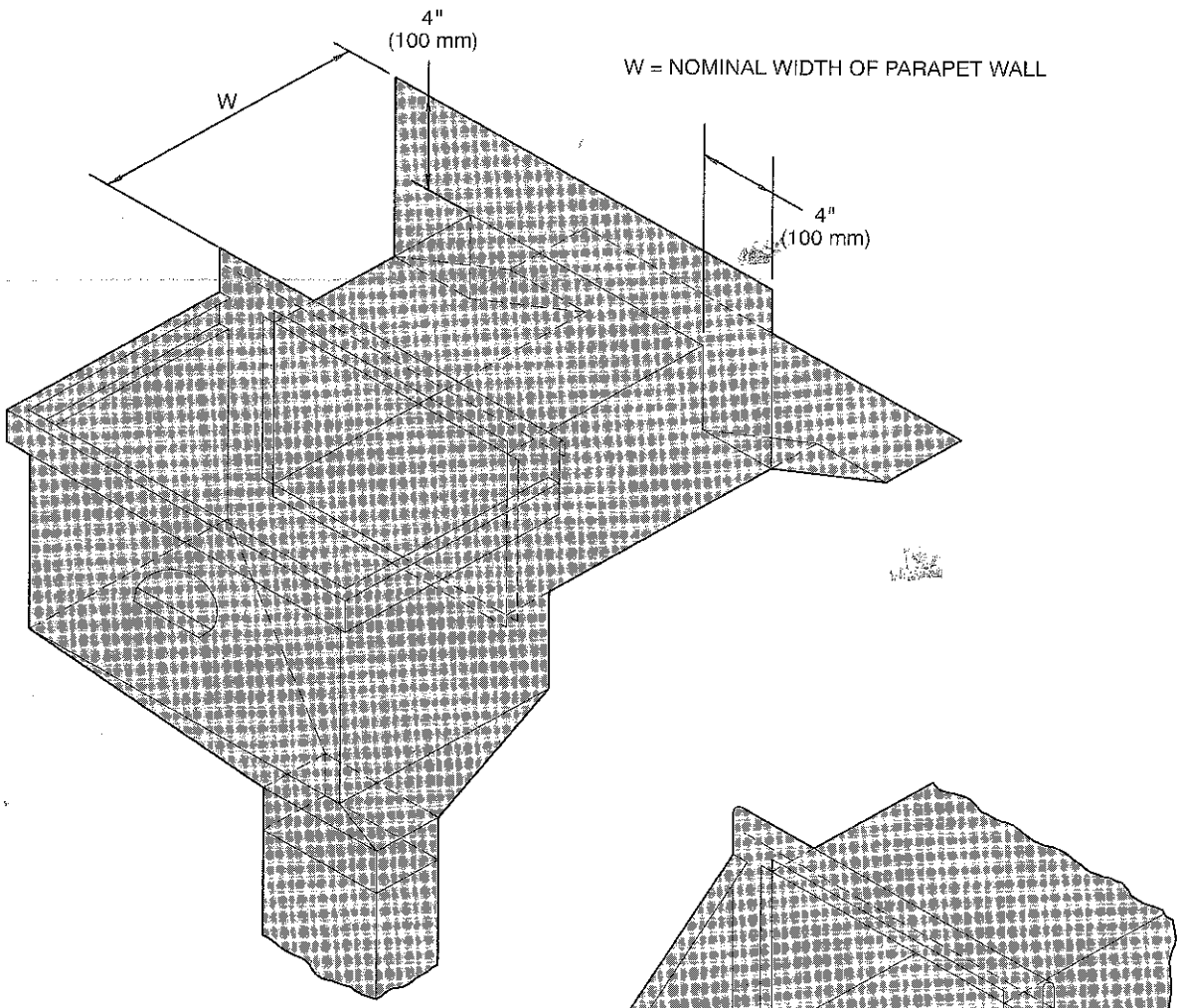


FIG 1-27A

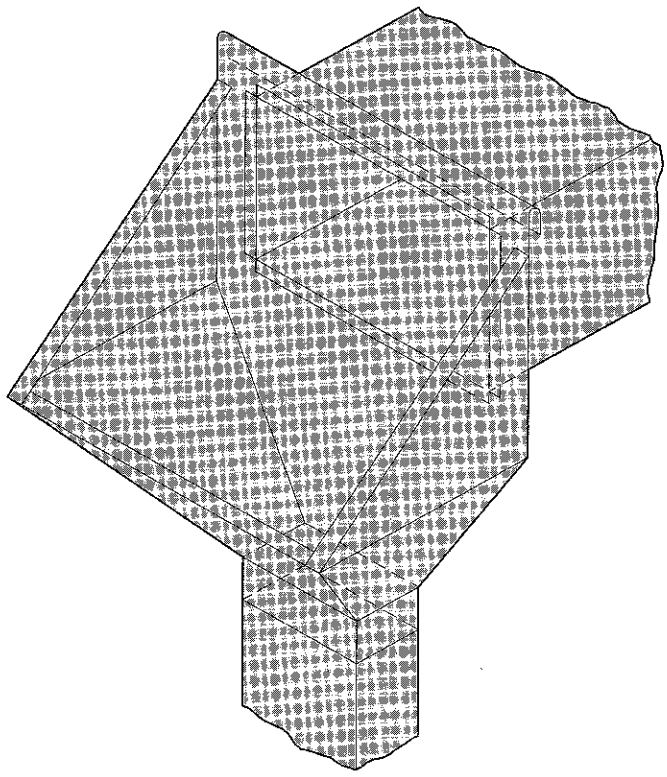


FIG 1-27B

FIGURE 1-27 SCUPPER DESIGN AND INSTALLATION

SCUPPER — THROUGH FASCIA WITH CONDUCTOR HEAD

FIGURE 1-28

Figure 1-28 illustrates a typical installation of a scupper through a raised roof edge and gravel stop, discharging into a conductor head and downspout. Overflow openings in conductor heads (Figures 1-25B and 1-25C) are recommended for use in heavy icing areas and for drains that may become plugged by leaves or excessive debris.

The conductor head should be a minimum of 2 in. (50 mm) wider than the scupper. Scupper is fabricated with a flange, which extends onto tapered edge strip and back 4 in. (100 mm) on roof.

Conductor head may be fitted around scupper as shown in Section A–A, or may be locked to scupper as illustrated in Alternate Section A–A. Conductor head is anchored to the nailer through the gravel stop.

All bare metal joints are soldered except in aluminum construction. In aluminum construction welded joints are used. A compatible sealant is used on precoated metal joints. Conductor head, gravel stop, downspout, and scupper should be fabricated of the same material. A gravel stop is fastened to the floor of the scupper. Recommended minimum for construction of scuppers is 24 ga (0.701 mm) galvanized steel, 0.040 in. (1.016 mm) aluminum, 16 oz (0.55 mm) copper, or 26 ga (0.477 mm) stainless steel, or coated metal.

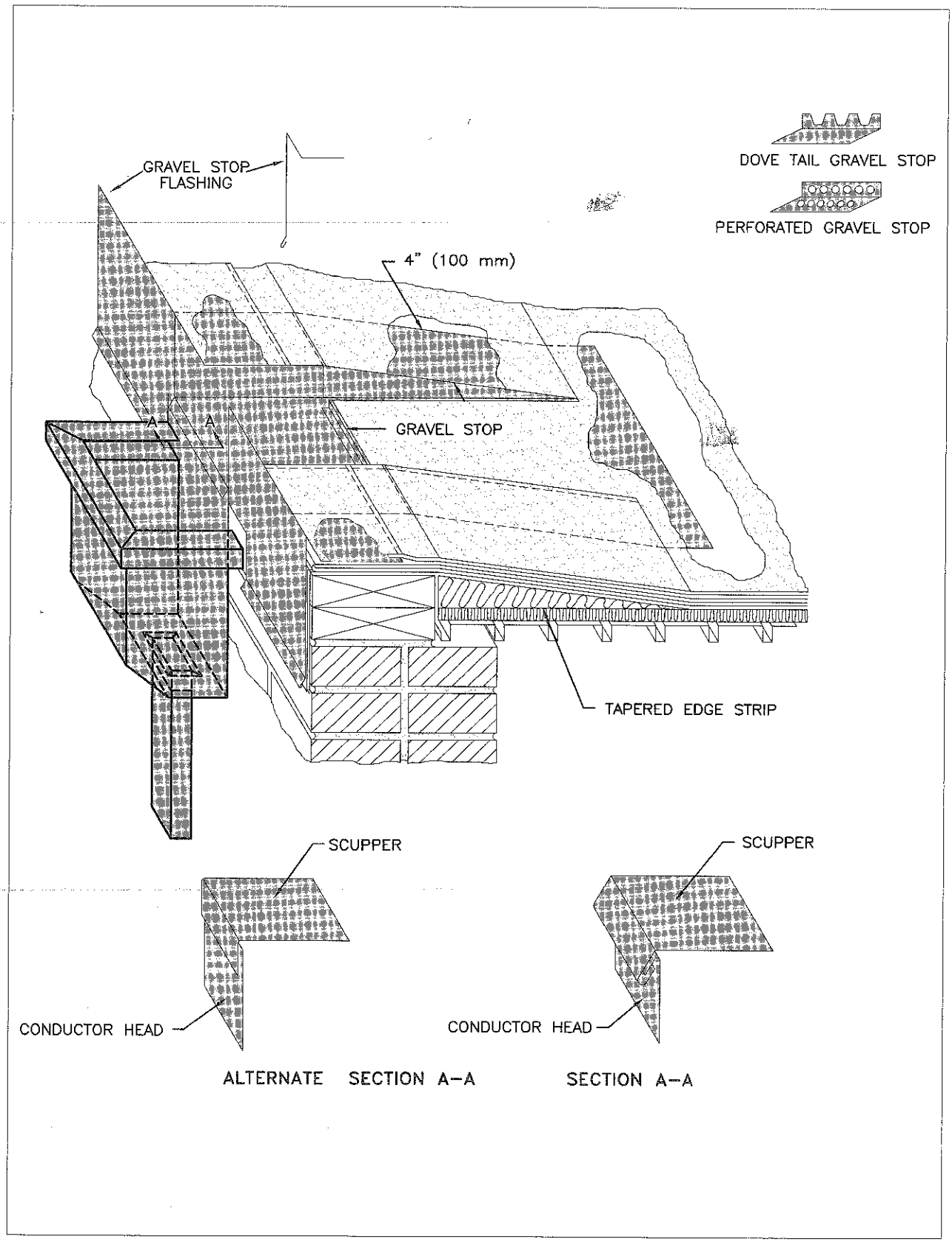


FIGURE 1-28 SCUPPER — THROUGH FASCIA WITH CONDUCTOR HEAD